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# THE EMPLOYMENT OF VETERANS IN STATE AND LOCAL GOVERNMENT SERVICE


## Abstract

Has veterans' preference been successful in increasing military veterans' access to state and local government (SLG) jobs? U.S. Census data for 1980 through 2011 shows that veterans are more likely than nonveterans to work for SLGs, despite some characteristics that would normally make them less likely to take SLG jobs. This is especially true in states that offer absolute preference or pay well relative to the private sector.



**Keywords:** State and Local Government, Veterans' Preference, Workforce Diversity

## Introduction

With the wars in Iraq and Afghanistan winding down, 2.6 million Gulf War II-era veterans face above-average unemployment rates[1] (U.S. Bureau of Labor Statistics 2013). To ease veterans' re-entry into the civilian labor force, as well as to honor and reward their service to the nation, public personnel systems have made hiring veterans an important goal at least since World War I (U.S. Civil Service Commission 1955). State and local governments (SLGs) treat veterans preferentially in hiring: four states give them absolute preference – hiring qualified veterans ahead of more-qualified nonveterans – and the other 46 use point systems that mirror the traditional federal system. SLGs have been far less successful than the federal government in hiring veterans, however: federal employees are currently three times as likely as SLG workers to be veterans (Table 1).

This article assesses how effective state and local veterans' preference programs are in getting veterans access to SLG jobs. In addition to the potential implications for America's commitments to our veterans, their effectiveness may also affect the diversity and quality of SLG workforce. Veterans are overwhelmingly male and disproportionately white, heterosexual, and native-born; a highly successful veterans' preference program may lead to a less representative bureaucracy. Further, Lewis (2013) finds that federal employees with veterans' preference advance more slowly than nonveterans hired into similar positions, implying that strong veterans' preference may lower the quality of the public service, though Johnson (2014) finds that veterans advance just as quickly as nonveterans, once additional characteristics of entry positions are controlled.

Using U.S. Census data for 1980 through 2011, this article examines whether SLGs employ veterans at rates higher than the private sector and tests several hypotheses to explain the

variation in their success. Although the veteran percentage of SLG employees is not particularly high, the characteristics of veterans and the desirability of SLG jobs may have more impact than the strength of veterans' preference programs. First, women and minorities are more likely to want government jobs, but veterans are overwhelmingly male and disproportionately white. Second, governments tend to hire more educated employees, but veterans may be less likely than nonveterans to be college graduates. Thus, once individual characteristics that predict public sector employment are controlled, veterans may be substantially more likely than comparable nonveterans to work for SLGs. Third, veterans may choose not to take advantage of hiring preference because SLG pay is not high enough or because SLG jobs do not match their interests. State-level analyses therefore regress representation of veterans on the size of the SLG-private pay gap and the gender mix predicted by the government's occupational composition, controlling for whether the state offers absolute preference and how high the veteran percentage of the civilian workforce is.

## The Impact of Veterans' Preference on Employment of Veterans

All 50 states give veterans preferential treatment in hiring. Massachusetts, New Jersey, Pennsylvania and South Dakota offer absolute preference – they hire qualified veterans ahead of more qualified nonveterans. In Massachusetts, for instance, job applicants with passing scores are ranked based on their scores, but in this order: all disabled veterans, followed by all non-disabled veterans, followed by widows and widowed mothers of veterans, followed by other non-veterans (Browne 1980, 1111-12).

The other 46 states use point systems modeled on the traditional federal approach (Fleming and Shanor 1977; Virelli 2004). Under that approach, disabled veterans received 10-point bonuses on 100-point federal civil service exams (or other assessments of their abilities),

and other qualifying[2] veterans (and the spouses/widows of severely disabled/deceased veterans) received 5-point bonuses. Applicants with passing scores of 70 or above earned places on a civil service register, ranked by their scores after adding veterans' preference. Veterans ranked ahead of nonveterans with the same final scores, and disabled veterans with passing scores "floated" to the top of the register in some cases, ahead of even non-disabled veterans with perfect scores. Under "the rule of three", federal hiring officials saw only the top three applicants on their register, and they could "pass over" a veteran to hire a lower-ranked nonveteran only with a written explanation.[3] Most state plans follow this general pattern, but details are difficult to determine, making it hard to rank the strength of veterans' preference other than a simple division into absolute preference and point systems (Fleming and Shanor 1977; Virelli 2004).

Little research examines how preference affects veterans' probability of obtaining SLG jobs, but the impact at the federal level is dramatic. In the 1970s, veterans made up twice as big a share of the federal as of the non-federal workforce (U.S. General Accounting Office 1977). Blank (1985) finds that veterans are much more likely to work for government, especially at the federal level, than non-veterans of the same sex, race, experience level, and educational attainment. Sanders (2007, 412) finds that being a veteran raises the odds of a government job by about 40% for native-born citizens and nearly doubles them for immigrants, though he does not distinguish between federal and SLG patterns. Lewis (2013) finds that veterans' odds of federal employment were more than four times as high as those for comparable non-veterans in 2006-9, but that their odds of SLG employment were only 10% to 20% higher than those for comparable non-veterans.

A variety of differences between veterans and nonveterans might explain why veterans' preference does not have more effect in SLGs. First, veterans might be less likely to desire public

sector jobs. Women, minorities, and gay men are more likely than others to want government jobs (Blank 1985; Borjas 2002; Lewis and Frank 2002; Lewis and Ng forthcoming), but all these groups tend to be under-represented in the military. Until 1967, women's representation in the military was capped at 2%, and even today women make up only 14.5% of U.S. troops (CNN Staff 2013). Concerns that veterans' preference discriminatorily limited women's access to government jobs led to (unsuccessful) legal and political challenges to preference in the 1970s (Newland 1993; Browne 1980). Although President Truman began the racial desegregation of the military in 1948, blacks were less likely than whites to enlist until 1973. Today, 16% of the men and 31% of the women in the military are black (Dao 2011), but Hispanics and Asians remain under-represented, partly because high percentages of both groups are immigrants (Sanchez 2013). The military prohibited the service of homosexuals until the early 1990s (Berube 1990; Shilts 1993), and "Don't Ask, Don't Tell" prevented the open service of lesbians and gay men until September 2011. Despite the ban, a higher percentage of partnered lesbians than of other women have served in the military, though partnered gay men are less likely than other men to have done so (Gates 2004). If men, whites and heterosexuals disproportionately benefit from veterans' preference but have no special desire for government jobs, preference will have less impact on the composition of SLG work forces.

Second, veterans might be less likely to possess certain qualifications governments are looking for. The public sector tends to employ better-educated, older, and more experienced workers (Mirvis and Hackett 1983; Blank 1985; Borjas 2002; Lewis and Oh 2008; Bender and Heywood 2010; Lewis and Cho 2011). Veterans, on average, are older and more experienced than nonveterans, which should increase their probability of public employment, but they are also less likely to hold bachelor's or graduate degrees (Lewis 2013).

Thus, an analysis that only looks at what percentage of SLG employees are veterans may understate the impact of veterans' preference if other characteristics prevent veterans from receiving or taking SLG jobs. A more sophisticated analysis should look at whether veterans are more likely than *comparable* nonveterans to hold state jobs.

A strikingly higher percentage of federal than of SLG employees are veterans, even though four states offer clearly stronger preferential treatment and the other 46 offer preference that appears comparable to the federal system. Thus, other factors may matter as much as veterans' preference. First, veterans should be more likely to take advantage of preference when they find government jobs more desirable. Labor economists typically find that federal employees earn substantially more than comparably educated and experienced private sector workers of the same sex and race but that SLG workers typically earn about the same or less than they would in the private sector (Smith 1977, 1983; Long 1982; Krueger 1988; Moulton 1990; Belman, Franklin, and Heywood 1994; Belman and Heywood 2004; Bender and Heywood 2010; Gittleman and Pierce 2012). Pay disparities between comparable SLG and for-profit employers vary substantially across states (Belman and Heywood 1995; Kroncke and Long 1998; Llorens, Wenger, and Kellough 2008). If federal pay plays a large role in the over-representation of veterans in the federal service, then representation of veterans in SLGs should vary with their compensation levels.

Second, veterans may be more likely to work for governments that offer more jobs that fit with their interests. In the federal service, for instance, veterans make up a far higher percentage of employees in the Defense Department than in domestic agencies (U.S. Office of Personnel Management 2011). One proxy for jobs veterans want is their gender composition. Over 90% of veterans are men, and occupations remain largely segregated by sex.[4] In 2010, for instance, 28%

of SLG employees worked in occupations that were at least two-thirds female (e.g., 78% of elementary school teachers and 97% of secretaries were women), and 41% worked in occupations that were at least two-thirds male (e.g., 96% of firefighters and 85% of police officers were men). Only one-third worked in occupations where one sex did not outnumber the other more than 2-to-1. In SLGs, veterans are over-represented in more predominantly male occupations: they make up 8% of all employees, but 22% of police officers and 15% of firefighters, and only 3% of elementary school teachers and 2% of secretaries. Representation of veterans should be higher in states where the SLG workforce is disproportionately in traditionally male occupations.

In sum, simple measures of representation of veterans in SLG may understate the impact of veterans' preference, since veterans tend to possess characteristics that make them less likely to want or to qualify for public sector jobs. Models that control for race, sex, education, and experience should provide better estimates of the effects of preference. Further, interstate variation in representation of veterans can tell us more about the relative importance of veterans' preference and other government characteristics in attracting veterans. In general, states with stronger veterans' preference, higher pay relative to the private sector, and a more male-dominated occupational mix should all be more successful in hiring veterans.

## Data and Research Design

This analysis relies on data from the U.S. Census Bureau. For 1980, 1990, and 2000, it uses the 5% Public Use Microdata Samples (PUMS). Since 2001, the Census Bureau has fielded the American Community Survey (ACS) annually in place of the long form of the decennial census, using basically the same questionnaire. The random samples are much smaller in the ACS than in the PUMS; therefore, the analysis combines 2009-11 ACS data to estimate patterns

in 2010. The sample is restricted to full-time (36+ hours per week), full-year (50+ weeks per year) employees, dropping both the self-employed and part-time workers. Sample sizes range between 2.3 and 3.5 million per year.

To estimate how veterans' preference affects the probability that a veteran works for an SLG, the analysis proceeds in three steps. First, Table 1 reports the percentage of employees who are veterans in each sector (federal, state, and local governments, private for-profit businesses, and nonprofit organizations). It then converts these into representation ratios by dividing the veteran percentage in each sector by the percentage of the full-time civilian labor force who were veterans. In 2010, for instance, 25.7% of federal employees and 8.1% of all employees were veterans. The federal representation ratio was 3.2 (25.7/8.1), implying that federal employees were 3.2 times as likely as full-time employees generally to be veterans. Ratios substantially greater than 1 indicate "over-representation" of veterans. If veterans' preference increases the representation of veterans in government, representation ratios should be greater than one for all three levels of government and should remain reasonably stable even as the veteran percentage of the civilian labor force drops.

Second, to see whether these representation ratios understate the impact of veterans' preference in SLG, the next analyses examine whether veterans are more likely than demographically comparable nonveterans to work for SLGs. Table 2 first establishes that veterans and nonveterans differ substantially in sex, race, age, and educational attainment. Table 3 then uses logit analysis to examine how veteran status affects one's probability of working for a SLG, after controlling for these individual characteristics. These analyses drop federal employees to focus the comparison on SLG *versus* private sector employment.

In the individual-level analyses, the dependent variable (**SLG**) is coded 1 for those who work for a SLG and 0 for those employed by a for-profit firm or a nonprofit organization. The key independent variable (**veteran**) is coded 1 for those with military service and 0 for those with no military service.[5] Aside from age, the control variables (educational attainment, sex, race/ethnicity, citizenship, and state of employment) are coded as sets of dummy variables, as shown in Table 3.

Logit analysis assumes that the log-odds[6] of employment in SLGs are a linear function of the independent variables which means that the probability of SLG employment is not. Thus, by assumption, being a veteran increases one's log-odds of an SLG job by a fixed amount, holding the independent variables constant, but it increases one's probability of SLG employment by different amounts, depending on one's other characteristics. Table 4 translates the odds-ratios in Table 3 into probability differences, using the average partial effect (APE) approach. APE estimates the effect that being a veteran would have for each person in the data set, then takes the average of those effects (Wooldridge 2003).

The state-level analyses examine the impact of absolute rather than point-system veterans' preference, SLG-private pay differences, and occupational mix on the representation of veterans in SLGs. These require several steps. The first is to calculate two dependent variables that measure veterans' and nonveterans' relative likelihood of holding SLG jobs. The representation ratio is simply the percentage of SLG employees who are veterans, divided by the percentage of private sector employees in the state who are veterans, calculated for each state in each year. Second, the odds-ratio is veterans' odds of SLG employment relative to *comparable* nonveterans in the same state. This requires state-by-state logit analyses comparable to those in Table 3, with sector of employment as the dependent variable and **veteran** as the key independent variable, in

models that control for race/ethnicity, gender, age, education, and citizenship. Table 5 reports the odds-ratios on the **veteran** variable in each state in each year.

The second step uses state-by-state regressions to estimate the percentage difference in expected annual earnings between SLG and private sector employees of the same race, sex, age, educational level, and citizenship status, working the same number of hours in a typical week. The dependent variable is the natural logarithm of annual earnings. The key independent variable is the dummy variable **SLG**, which is coded 1 for people who work for SLGs and 0 for those who work for private firms or nonprofit organizations. These fairly standard regressions control for all the independent variables in the state-level logits for SLG employment, plus the natural logarithm of hours worked per week fairly standard (e.g., Llorens 2008; Llorens, Wenger, and Kellough 2008). The coefficient on **SLG** is converted to a percentage pay difference by exponentiating it, subtracting 1, and multiplying times 100.

The third step calculates the expected percentage male in each state's SLG workforce, based on its occupational mix. This is calculated as if each occupation had a single gender composition regardless of the employer. For instance, if 97% of secretaries nationwide are women, this method expects 97% of the secretaries who work for SLGs in each state to be women. Thus, to calculate the expected percentage male in a state's SLG workforce in 2010, for instance, the percentage of all employees in each occupation across all employers in 2010 is multiplied times the percentage of that state's SLGs workers who work in that occupation. The products are then summed across the 332 occupations.[7]

In separate regressions for each year, the fourth step regresses the representation ratios and odds-ratios on the following variables, using states as the units of analysis:

- *absolute preference* is coded 1 for Massachusetts, New Jersey, Pennsylvania and South Dakota and 0 for the 46 states with point systems
- *percentage SLG-private pay difference* is calculated in the second step
- *expected percentage male* is calculated in step three
- the percentage of the full-time workforce in the state who are veterans.

**Summary.** If veterans' preference increases the representation of veterans in the public sector: (1) representation ratios will be significantly greater than one at each level of government in each year and will be greater than one in SLGs in most states in most years; (2) veterans will be significantly more likely to work for SLGs than nonveterans with the same demographic characteristics; and (3) representation of veterans will be higher in states with stronger veterans' preference and more desirable SLG jobs (those with higher pay and more male co-workers).

## Findings

The number of veterans in the full-time civilian labor force has dropped steadily over the past three decades, from 29.5% in 1980 to 8.1% in 2010 (Table 1). Veteran representation in each sector dropped by about 20 percentage points, with representation always highest in the federal service and lowest in the nonprofit sector. The representation ratios show that veterans were 1.56 times as likely as nonveterans to be federal employees in 1980, and they were 3.19 times as likely as nonveterans to be federal employees in 2010. Representation ratios for SLGs, though typically above one, were never above 1.10.

[Table 1 about here]

Veterans were more than twice as likely as nonveterans to work for the federal government in 1980 (8.6% *versus* 4.2%) and over four times as likely to do so in 2010 (12.4% *versus* 2.9%), but they were less likely to work for SLGs in 1980 and only slightly more likely to

do so in 2010 (Table 2).[8] Veteran-nonveteran differences on a number of dimensions may help explain this. A far higher percentage of veterans than of nonveterans are men (90.8% *versus* 52.9% in 2010), though that difference has shrunk over the past thirty years (the figures were 98.1% and 51.7% in 1980). Veterans are also disproportionately white (75.9% *versus* 66.8% in 2010). All other race/ethnicities were under-represented among veterans in 1980, but blacks and those of other/mixed races now make up larger shares of veterans than nonveterans. White, black, and other/mixed race men are disproportionately likely to be veterans in all years, but smaller percentages of veterans than of nonveterans are Latino and Asian men, presumably largely because large shares of these groups are immigrants. (In 2010, 17.2% of nonveterans and only 3.3% of veterans were immigrants.)

[Table 2 about here]

Educational differences were small but growing. Veterans were more likely to have completed high school: in 2010, they were only one-fourth as likely as nonveterans *not* to have graduated from high school (2.1% *versus* 8.1%). The over-representation of immigrants among nonveterans exaggerates that difference; among non-immigrants, 4.6% of nonveterans and 2.0% of veterans did not complete high school. In 2010, veterans were less likely than nonveterans to have graduated from college (28.3% *versus* 36.4%), but this pattern is relatively new. In 1980, veterans were nearly indistinguishable from nonveterans in terms of educational attainment. In both years, veterans had slightly more years of education, on average. Age, and presumably experience, differences are not new, however. Veterans, on average, were 7 to 8 years older than nonveterans in all years.

All these characteristics have strong impacts on whether employees work for SLGs or in the private sector. Table 3 shows odd-ratios from the logit models, and Table 4 converts them

into probability differences. Due to the huge sample sizes, all coefficients are highly significant and most confidence intervals are quite narrow. White women's odds of working for SLGs, for instance, were 1.3 to 1.5 times the odds for white men of the same age, educational attainment, and citizenship status, working in the same state (Table 3), which translated into probability differences of 2.8 to 4.6 percentage points, when 12% to 14% of Americans worked for SLGs (Table 4). With the exception of Asian men (whose odds of SLG employment fell from 17% higher than comparable white men's in 1980 to 18% lower in 2010), odds-ratios for all minority groups are substantially above one. Compared to similar white men, for instance, black men's odds of SLG employment are 1.8 to 2.1 times as high, those of black women are 2.3 to 3.1 times as high, and those of Latina women are almost exactly twice as high. Interestingly, odds-ratios fell for most groups from 1980 to 2010. Still, even in 2010, black women, Latinas, and black men were expected to be 10.6, 8.6, and 6.7 percentage points, respectively, more likely than comparable white men to work for SLGs.

[Tables 3 and 4 about here]

More educated people are far more likely to work for SLGs. The odds that employees with doctorates will work for an SLG are 5.1 to 6.2 times as high as the odds for comparable high school graduates. Odds are twice as high for college as for high school graduates, and twice again as high for those with master's degrees. Odds for those who did not graduate high school were only a bit more than half as high as those for high school graduates in 2010.

Age, experience, and immigration/citizenship status also matter. The probability of SLG employment rises by one percentage point for every four or five years of age. (Sensitivity analyses confirm that the relationship was nearly linear in each year.) Native-born U.S. citizens

were the most likely to work for SLGs. Even those born abroad of American parents were 2 percentage points, and non-citizens were nearly 10 points, less likely to do so.

Veteran status matters less than these other factors, but its importance seems to be growing. The odds-ratio on **veteran** grew from 1.08 in 1980 to 1.21 in 2010. That is, veterans' odds of SLG employment are now 21% higher than the odds for comparable nonveterans. This translates into an average effect of 2.5 percentage points, up from 0.9 percentage point in 1980. This is about the effect of having some college rather than just a high school diploma or of being born in the U.S. rather than born abroad to American citizens. Controlling for differences in other characteristics makes SLGs look better in their efforts to hire veterans. In 1980, veterans were 0.3 percentage points less likely than nonveterans to work for SLGs (Table 2) but 0.9 percentage point *more* likely than *comparable* nonveterans to do so (Table 4). In 2010, the difference is 1.2 percentage points overall and 2.5 percentage points among comparable veterans and nonveterans.

**State-level analyses.** The states vary substantially in their representation of veterans in SLG workforces. Figure 1 shows that representation ratios in 2010 varied between 0.81 in West Virginia and 1.44 in Pennsylvania and Massachusetts (veterans were between 19% less likely and 44% more likely than non-veterans to work for SLGs). Table 5 shows that veterans' odds of SLG employment are higher relative to nonveterans' odds after controlling for demographic characteristics that affect probabilities of working for SLGs. In 2010, for instance, veterans' odds of working for an SLG in Pennsylvania were 1.7 times as high as the odds for comparable nonveterans, and 34 of the odds-ratios were significantly greater than 1. In contrast to the representation ratios, only four odds-ratios in 2010 were less than 1, and three of them were 0.98.

Only two states had any odd-ratios significantly lower than 1 (Virginia in 1980, 1990, and 2000 and Oklahoma in 1980).

[Figure 1 and Table 5 about here]

None of the representation ratios or odds-ratios comes close to those for the federal government, however, even though preference is sometimes stronger in SLGs. Figure 1 suggests that both the strength and desirability of veterans' preference influence the representation of veterans. The three states with the highest representation ratios (Pennsylvania, Massachusetts, and New Jersey) all give veterans absolute preference in hiring. All also had odds-ratios in the top ten in all four years, and Pennsylvania and Massachusetts were in the top four in all four years. Veterans are not over-represented in the other absolute preference state, South Dakota, however.

Figure 1 also shows that states vary widely in how they pay SLG employees relative to how the private sector in the state pays similar workers, with point estimates from 20% less in West Virginia to 12% more in Nevada in 2010.[8] Point estimates varied substantially by both state and year, with the average pay disadvantage shrinking from 17% in 1980 to 9% in 2010. Because SLG jobs typically offer higher job security, better benefits, and more opportunities to contribute to society than private sector jobs do, public sector jobs are still desirable for many, even if salaries are lower. Nonetheless, Figure 1 shows that representation of veterans tends to be higher in states with higher relative pay, with those three absolute preference states still standing out for representation of veterans.

Regressions using states as the units of analysis confirm this pattern (Table 6). Even holding constant the desirability of SLG jobs (their pay and occupational mix), panel 1 shows that absolute veterans' preference raises the representation ratio by 12% to 22%. After also

controlling for individual characteristics, panel 2 shows that absolute preference still raises veterans' odds of SLG employment by 8% to 18% (though the effects fall short of statistical significance in 1980 and 2010).

[Table 6 about here]

When SLG jobs pay more, representation of veterans rises, suggesting they are more interested in taking advantage of preference. As SLG pay rose one percent relative to pay for comparable employees in the for-profit sector, veterans' representation ratio rose by 0.005 to 0.012 (about one-half to one percent). The estimates are nearly identical when the odds-ratio is the dependent variable. Holding their other characteristics constant, veterans are more likely to take SLG jobs when SLG pay is higher relative to the private sector. Representation of veterans also tends to be higher in states where the SLG occupational distribution is weighted more heavily to predominantly male occupations, but that pattern has weakened substantially (the 2010 coefficient is only one-fourth the size of the 1980 coefficient in the representation ratio model), and the effect of occupational mix never approaches statistical or substantive significance in the odds-ratio models. Representation ratios are also lower in states with more veterans, though this effect does not show up in the odds-ratio models until 2010.

Low relative pay is a major reason representation of veterans in SLGs is not higher. To estimate the effects of veterans' preference in the absence of a pay disadvantage to working for SLGs, predicted representation and odds ratios for each state in each year were generated from the regression models twice – once using the actual SLG pay rate and once setting SLG pay at 100% of the pay of comparable workers in the private sector. Although 30 states had predicted representation ratios under 1 in 1980 (suggesting under-representation of veterans), only one state's representation ratio was below 1 after assuming no SLG pay disadvantage (and it

was .995). In 2010, eliminating pay differences between the SLG and private sectors raised the average predicted representation ratio from 1.07 to 1.17 and the average predicted odds-ratio from 1.29 to 1.40. The "predicted RR [or OR] with equal pay" lines in Table 6 set the occupational mix and veteran representation in the civilian workforce to their means and set SLG pay at 100% of private sector pay. Under those conditions, the predicted representation ratio varies between 1.10 and 1.26 in a state with a point system for veterans' preference and between 1.22 and 1.43 if the state awards absolute veterans' preference. Predicted odds-ratios are higher: rising from 1.16 to 1.39 with a point system and from 1.28 to 1.47 with absolute preference. That is, in 2010, a veteran's odds of SLG were predicted to be 39% higher than those for a nonveteran of the same age, educational attainment, race, and sex in states where SLG jobs paid as well as private sector jobs, and 47% higher if the state granted absolute preference.

## Conclusion

Veterans' preference gets veterans government jobs. The impact is especially strong in the federal sector – veterans are now more than four times as likely as nonveterans to hold federal jobs. Veterans are also 10% more likely than non-veterans to hold SLG jobs. Demographic differences mask the actual amount of over-representation: veterans' odds of SLG employment are 21% higher than those of nonveterans of the same age, gender, race, and educational attainment.

SLGs would employ more veterans if they paid better. The wide variation across states (with 2010 representation ratios above 1.4 in five states and below 0.9 in seven) can be largely explained by states' use of absolute or point-system preference and by relative SLG-private sector pay. Regression models predicted that, if SLG and private sector pay for comparable workers had been the same in every state, representation ratios would almost always have

exceeded 1 and would have averaged 1.17 in 2010. Demographic differences can also explain almost all the under-representation. Veterans were significantly more likely than *comparable* nonveterans to hold SLG jobs in most states in each year, by 60% or more in five states in 2010; and across the four years, only four odds-ratios were significantly below 1. If SLG pay had matched private sector pay, veterans were predicted to be more likely than comparable nonveterans to hold SLG jobs in every state in every year, with odds that were about 40% higher than those for comparable nonveterans, on average in 2010. In sum, SLGs are doing a good job of hiring veterans and would probably need to raise pay to do a better job.

**Notes:**

[1] Overall, however, veterans are less likely than nonveterans to be unemployed.

[2] To qualify for veterans' preference in the federal service, one must have 180 or more consecutive days of active duty service since September 11, 2001; or between August 2, 1990 and January 2, 1992; or between January 31, 1955 and October 15, 1976; or between April 28, 1952 and July 1, 1955; or in World War II or the Cold War (between December 7, 1941 and April 28, 1952). One must also have received an honorable or general discharge. http://www.fedshirevets.gov/job/vetpref/index.aspx

[3] Under the newer category rating system, the agency defines two or more categories of qualified applicants. Hiring officials can look at all applicants in the top category, but all veterans are placed ahead of all non-veterans within a category, and hiring officials still need approval to pass over a qualified veteran.

[4] Economy-wide, 51% of employed women in the U.S. would have needed to change occupations in 2009 for women to have the same occupational distribution as men; in 1980, 60% would have had to do so (Blau, Brummund, and Liu 2012, 40).

[5] Military service does not guarantee eligibility for veterans' preference - some periods of service do not qualify, and veterans with dishonorable discharges do not receive preference, for instance - but requirements for eligibility vary across time and states, and previous attempts to use Census data to distinguish between veterans who do and do not qualify for federal veterans' preference resulted in unacceptably high measurement error (Lewis 2013). Combining preference-eligible and –ineligible veterans in the same variable will tend to understate the impact of veterans' preference on government employment.

[6] One's odds of state government employment are one's probability of holding a state job divided by one's probability of holding a private sector job. In logit analysis, the dependent variable is the natural logarithm of the odds (the log-odds).

[7] That is, we calculate the percentage of all U.S. full-time workers in each occupation who are men. We then multiply those percentages times the proportion of SLG workers in each state who are in each occupation to generate the expected percentage male in each state's SLG workforce.

[8] The states with the most extreme pay disparities have some of the smallest samples of SLG employees, emphasizing the need not to assume these estimates are precise.

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**Table 1: Representation of Veterans by Sector, 1980-2010**

**Percentage of Employees who are Veterans and Representation Ratios**

| | 1980 | 1990 | 2000 | 2010 |
|---|---|---|---|---|
| Federal government | 46.0<br>(1.56) | 37.9<br>(2.07) | 31.4<br>(2.43) | 25.7<br>(3.19) |
| Local governments | 30.6<br>(1.04) | 20.3<br>(1.10) | 14.1<br>(1.09) | 8.1<br>(1.01) |
| State governments | 26.5<br>(0.90) | 18.2<br>(1.00) | 13.6<br>(1.05) | 8.3<br>(1.03) |
| For-profit firms | 28.4<br>(0.96) | 17.5<br>(0.95) | 12.3<br>(0.95) | 7.5<br>(0.93) |
| Nonprofit organizations | - | 11.6<br>(0.64) | 8.2<br>(0.64) | 5.2<br>(0.64) |
| Total | 29.5 | 18.3 | 12.9 | 8.1 |

**Figures in Parenthesis are representation ratios*

**Table 2. Veteran-Nonveteran Differences in 1980 and 2010**

| | 1980 | | 2010 | |
|---|---|---|---|---|
| | Nonveterans | Veterans | Nonveterans | Veterans |
| **Sector of Employment** | | | | |
| Federal | 4.2% | 8.6% | 2.9% | 12.4% |
| State | 5.4 | 4.6 | 5.4 | 5.9 |
| Local | 7.6 | 8.0 | 8.6 | 9.2 |
| SLG | 12.9 | 12.6 | 13.9 | 15.1 |
| **Gender/Race/Ethnicity** | | | | |
| Male | 51.7 | 98.1 | 52.9 | 90.8 |
| White | 80.8 | 89.1 | 66.8 | 75.9 |
| Black | 10.6 | 6.6 | 10.7 | 13.3 |
| Latino | 6.1 | 3.1 | 14.9 | 7.1 |
| Asian | 1.9 | 0.7 | 5.6 | 1.6 |
| Other/Mixed | 0.6 | 0.5 | 1.9 | 2.2 |
| White male | 41.9 | 87.6 | 35.5 | 70.0 |
| White female | 38.9 | 1.6 | 31.4 | 5.8 |
| Black male | 4.8 | 6.4 | 4.5 | 11.1 |
| Black female | 5.9 | 0.2 | 6.2 | 2.2 |
| Latino | 3.7 | 3.0 | 9.0 | 6.4 |
| Latina | 2.4 | 0.1 | 6.0 | 0.7 |
| Asian male | 1.0 | 0.7 | 3.1 | 1.4 |
| Asian female | 0.9 | * | 2.6 | 0.1 |
| Other/Mixed male | 0.3 | 0.5 | 0.9 | 1.9 |
| Other/Mixed female | 0.3 | * | 1.0 | 0.3 |
| **Educational attainment** | | | | |
| No high school | 8.5 | 7.2 | 3.1 | 0.4 |
| Some high school | 12.1 | 12.3 | 5.0 | 1.7 |
| High school graduate | 37.6 | 36.9 | 21.9 | 22.4 |
| Some college | 22.8 | 23.6 | 33.7 | 47.2 |
| College graduate | 13.6 | 14.2 | 23.4 | 17.9 |
| Master's degree | 2.4 | 2.6 | 9.2 | 8.0 |
| Professional degree | 1.3 | 1.3 | 2.2 | 1.6 |
| Doctorate | 1.9 | 1.9 | 1.6 | 0.9 |
| **Citizenship** | | | | |
| Native-born U.S. citizen | 91.9 | 97.5 | 81.9 | 95.3 |
| Born abroad of American par ents | 0.3 | 0.3 | 0.9 | 1.4 |
| Naturalized citizen | 3.6 | 1.8 | 8.2 | 2.9 |
| Not a citizen | 4.1 | 0.4 | 9.0 | 0.4 |
| **Education in years (mean)** | 12.6 | 12.8 | 14.0 | 14.1 |
| **Age (mean)** | 36.6 | 44.8 | 41.7 | 48.9 |

**Table 3: Odds-Ratios for SLG Employment**

| | 1980 | 1990 | 2000 | 2010 |
|---|---|---|---|---|
| Veteran | 1.08 | 1.08 | 1.13 | 1.21 |
| | (14.59) | (12.21) | (19.12) | (20.23) |
| **Gender/Race/Ethnicity (white males are reference group)** | | | | |
| White Female | 1.51 | 1.31 | 1.37 | 1.51 |
| | (78.54) | (53.61) | (68.51) | (71.68) |
| Black Male | 2.14 | 2.27 | 1.97 | 1.77 |
| | (88.95) | (84.83) | (73.95) | (45.48) |
| Black Female | 3.09 | 2.75 | 2.53 | 2.30 |
| | (127.04) | (109.75) | (112.05) | (79.95) |
| Latino | 1.49 | 1.64 | 1.47 | 1.28 |
| | (31.30) | (39.14) | (34.31) | (19.05) |
| Latina | 2.01 | 2.04 | 2.04 | 2.01 |
| | (43.83) | (50.77) | (62.21) | (57.64) |
| Asian Male | 1.17 | 1.18 | 0.93 | 0.82 |
| | (6.48) | (7.79) | (-3.89) | (-9.99) |
| Asian Female | 1.94 | 1.57 | 1.30 | 1.18 |
| | (26.00) | (20.35) | (14.16) | (8.89) |
| Other/Mixed Male | 1.92 | 1.77 | 1.34 | 1.49 |
| | (21.07) | (16.37) | (15.56) | (16.12) |
| Other/Mixed Female | 2.79 | 2.29 | 1.76 | 1.99 |
| | (27.59) | (23.51) | (28.86) | (30.14) |
| **Educational attainment (high school graduate is reference group)** | | | | |
| No high school | 1.25 | 1.43 | 1.57 | 1.70 |
| | (29.82) | (38.95) | (42.83) | (28.89) |
| Some high school | 1.08 | 1.03 | 0.96 | 0.96 |
| | (7.68) | (1.68) | (-2.11) | (-1.27) |
| Some college | 1.73 | 1.91 | 2.20 | 2.23 |
| | (70.76) | (70.44) | (76.09) | (44.94) |
| College graduate | 2.93 | 2.61 | 3.14 | 3.32 |
| | (132.66) | (99.30) | (107.73) | (66.72) |
| Master's degree | 6.08 | 5.97 | 6.08 | 7.51 |
| | (160.41) | (169.36) | (159.77) | (110.04) |
| Professional degree | 6.42 | 3.39 | 3.90 | 4.41 |
| | (129.74) | (76.36) | (88.16) | (67.74) |
| Doctorate | 6.90 | 9.05 | 9.59 | 8.60 |
| | (155.43) | (134.69) | (140.00) | (94.71) |

**Citizenship (native-born Americans are reference group)**

| | | | | |
|---|---|---|---|---|
| Born abroad of American parents | 0.83 | 0.85 | 0.85 | 0.81 |
| | (-4.95) | (-5.68) | (-6.86) | (-8.05) |
| Naturalized citizen | 0.60 | 0.58 | 0.62 | 0.62 |
| | (-37.97) | (-40.81) | (-43.65) | (-42.27) |
| Not a citizen | 0.32 | 0.35 | 0.35 | 0.30 |
| | (-65.11) | (-65.23) | (-75.81) | (-74.77) |
| **Age** | 1.017 | 1.025 | 1.024 | 1.019 |
| | (92.45) | (122.11) | (125.21) | (86.12) |
| Observations | 2,321,584 | 2,720,567 | 3,164,390 | 2,170,197 |
| R-squared | 0.048 | 0.048 | 0.047 | 0.059 |

*Absolute t-statistics in parentheses. All effects are significant at .0001 level. Models also include 50 dummy variables for state of employment, and the 2010 model includes two dummy variables for survey year.*

## Table 4. Average Partial Effects

| | 1980 | 1990 | 2000 | 2010 |
|---|---|---|---|---|
| Veteran | 0.9 | 1.0 | 1.4 | 2.5 |
| ***Gender/Race/Ethnicity*** | | | | |
| White male [reference group] | . | . | . | . |
| White Female | 4.6 | 2.8 | 3.2 | 4.6 |
| Black Male | 9.3 | 9.7 | 7.7 | 6.7 |
| Black Female | 15.4 | 12.8 | 11.4 | 10.6 |
| Latino | 4.3 | 5.3 | 4.0 | 2.6 |
| Latina | 8.4 | 8.2 | 8.3 | 8.6 |
| Asian Male | 1.5 | 1.5 | -0.6 | -1.7 |
| Asian Female | 7.8 | 4.7 | 2.6 | 1.7 |
| Other/Mixed Male | 7.7 | 6.2 | 2.9 | 4.4 |
| Other/Mixed Female | 13.6 | 9.9 | 6.2 | 8.4 |
| ***Level of Education*** | | | | |
| No high school | -1.2 | -2.3 | -3.2 | -3.9 |
| Some high school | -1.8 | -2.6 | -3.0 | -3.7 |
| High school graduate [reference group] | . | . | . | . |
| Some college | 3.4 | 2.6 | 3.0 | 2.6 |
| College graduate | 10.6 | 6.3 | 7.1 | 7.4 |
| Master's degree | 24.2 | 19.5 | 17.5 | 21.3 |
| Professional degree | 25.4 | 9.8 | 10.1 | 11.5 |
| Doctorate | 27.1 | 28.5 | 27.2 | 24.2 |
| ***Citizenship*** | | | | |
| Native-born citizen [reference group] | . | . | . | . |
| Born abroad of American parents | -1.8 | -1.6 | -1.7 | -2.5 |
| Naturalized citizen | -4.9 | -4.9 | -4.4 | -5.2 |
| Not a citizen | -8.9 | -7.0 | -8.13 | -10.2 |
| **Age** | 0.18 | 0.26 | 0.25 | 0.22 |
| Observations | 2,321,584 | 2,720,567 | 3,164,390 | 2,170,197 |
| R-squared | 0.048 | 0.048 | 0.047 | 0.059 |

*All effects are significant at .0001 level. Models also include 50 dummy variables for state of employment, and the 2010 model includes two dummy variables for survey year.*

**Table 5. Ratio of Comparable Veterans' to Non-veterans' Odds of SLG Employment**

| | 1980 | 1990 | 2000 | 2010 |
|---|---|---|---|---|
| Pennsylvania[a] | 1.21*** | 1.40*** | 1.63*** | 1.70*** |
| Nevada | 1.2 | 1.25*** | 1.34*** | 1.68*** |
| Massachusetts[a] | 1.43*** | 1.45*** | 1.48*** | 1.63*** |
| Vermont | 1.46** | 1.20 | 1.27 | 1.63** |
| California | 1.28*** | 1.32*** | 1.38*** | 1.60*** |
| Hawaii | 0.82 | 1.38*** | 1.13 | 1.54*** |
| Illinois | 1.16*** | 1.23*** | 1.34*** | 1.54*** |
| Rhode Island | 1.09 | 1.07 | 1.34** | 1.52** |
| New Jersey[a] | 1.25*** | 1.23*** | 1.35*** | 1.46*** |
| New York | 1.21*** | 1.21*** | 1.20*** | 1.46*** |
| Connecticut | 1.13 | 1.22*** | 1.35*** | 1.45*** |
| Florida | 1.16*** | 1.23*** | 1.28*** | 1.45*** |
| Texas | 1.06* | 1.11*** | 1.23*** | 1.45*** |
| Michigan | 1.13*** | 1.08** | 1.16*** | 1.42*** |
| Arizona | 1.13* | 1.27*** | 1.28*** | 1.40*** |
| New Hampshire | 0.93 | 1.17 | 1.27** | 1.39** |
| Nebraska | 1.01 | 1.15* | 0.92 | 1.38*** |
| Utah | 0.91 | 0.99 | 1.11 | 1.36*** |
| Washington | 1.13** | 1.26*** | 1.22*** | 1.36*** |
| Missouri | 1.04 | 1.22*** | 1.36*** | 1.35*** |
| Wisconsin | 1.16 | 1.22*** | 1.16*** | 1.35*** |
| Oregon | 1.2 | 1.35*** | 1.26*** | 1.34*** |
| Louisiana | 1.00 | 0.99 | 1.09 | 1.32*** |
| Colorado | 1.07 | 1.11* | 1.15*** | 1.31*** |
| Minnesota | 1.07 | 1.32*** | 1.28*** | 1.27*** |
| Georgia | 1.05 | 1.12*** | 1.23*** | 1.26*** |
| Kansas | 0.90 | 1.23*** | 1.17** | 1.26** |
| North Carolina | 1.00 | 1.03 | 1.11*** | 1.26*** |
| Kentucky | 1.01 | 1.00 | 1.03 | 1.23** |
| Ohio | 1.05 | 1.09*** | 1.19*** | 1.23*** |
| Delaware | 1.09 | 1.22* | 1.46*** | 1.22 |
| Oklahoma | 0.87* | 1.09 | 1.06 | 1.21** |
| South Dakota[a] | 0.90 | 1.04 | 1.13 | 1.21 |
| Tennessee | 1.05 | 1.12** | 1.05 | 1.21*** |
| Iowa | 1.13 | 1.31*** | 1.05 | 1.16 |
| Maryland | 0.95 | 0.97 | 1.09** | 1.16** |

| | | | | |
|---|---|---|---|---|
| Montana | 0.96 | 1.01 | 1.38*** | 1.15 |
| Idaho | 1.31** | 1.27** | 1.16 | 1.13 |
| Indiana | 0.99 | 1.07 | 1.14*** | 1.13 |
| Alabama | 1.04 | 1.06 | 1.11* | 1.12 |
| Wyoming | 1.27 | 1.06 | 1.34** | 1.12 |
| North Dakota | 0.87 | 1.09 | 1.35** | 1.09 |
| South Carolina | 1.01 | 1.00 | 1.17** | 1.07 |
| New Mexico | 0.9 | 1.11 | 1.13 | 1.03 |
| Maine | 0.96 | 1.26** | 1.17 | 1.02 |
| West Virginia | 0.74 | 0.96 | 1.20** | 1.01 |
| Arkansas | 0.90 | 1.09 | 1.03 | 0.98 |
| Mississippi | 1.04 | 0.95 | 1.08 | 0.98 |
| Virginia | 0.90* | 0.93* | 0.89*** | 0.98 |
| Alaska | 1.04 | 1.28** | 1.28** | 0.82 |

a State has absolute veterans' preference during some periods.
*** p<0.01, ** p<0.05, * p<0.

Numbers are odds-ratios on veteran variable. Logit models are run separately by state and year; all control for race and sex (9 dummy variables), education (23 dummy variables), and age (45 dummy variables). Figures for 2010 actually combine data for 2009 through 2010. States are ranked by size of odds-ratio in 2010.

**Table 6. Predictors of Veterans' Representation**

| **Representation Ratio** | **1980** | **1990** | **2000** | **2010** |
|---|---|---|---|---|
| Absolute preference | 0.118** | 0.169*** | 0.223*** | 0.157*** |
| | (2.46) | (3.64) | (4.61) | (2.71) |
| SLG pay as percentage of | 0.007*** | 0.012*** | 0.007*** | 0.011*** |
| private sector pay | (3.62) | (6.13) | (3.34) | (4.35) |
| Occupational mix | 0.030*** | 0.022*** | 0.015* | 0.007 |
| (Expected percent male) | (4.28) | (3.04) | (2.00) | (0.77) |
| Veteran percentage | -0.012** | -0.020*** | -0.014** | -0.033*** |
| of state civilian workforce | (2.07) | (3.53) | (2.20) | (3.39) |
| R-squared | 0.57 | 0.69 | 0.64 | 0.66 |
| *Predicted RR with equal pay and* | | | | |
| *points for veterans' preference* | 1.10 | 1.26 | 1.18 | 1.15 |
| *absolute preference* | 1.22 | 1.43 | 1.40 | 1.31 |
| **Odds-Ratio** | **1980** | **1990** | **2000** | **2010** |
| Absolute preference | 0.118 | 0.133** | 0.177** | 0.0758 |
| | (1.64) | (2.29) | (2.41) | (0.94) |
| SLG pay as percentage of | 0.007** | 0.011*** | 0.005* | 0.0127*** |
| private sector pay | (2.34) | (4.20) | (1.68) | (3.55) |
| Occupational mix | 0.006 | -0.011 | -0.002 | -0.006 |
| (Expected percent male) | (0.54) | (1.19) | (0.15) | (0.48) |
| Veteran percentage | 0.009 | 0.012 | 0.002 | -0.049*** |
| of state civilian workforce | (1.01) | (1.61) | (0.19) | (3.67) |
| R-squared | 0.22 | 0.35 | 0.21 | 0.54 |
| *Predicted RR with equal pay and* | | | | |
| *points for veterans' preference* | 1.16 | 1.28 | 1.25 | 1.39 |
| *absolute preference* | 1.28 | 1.41 | 1.43 | 1.47 |
| Observations | 51 | 51 | 51 | 51 |

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

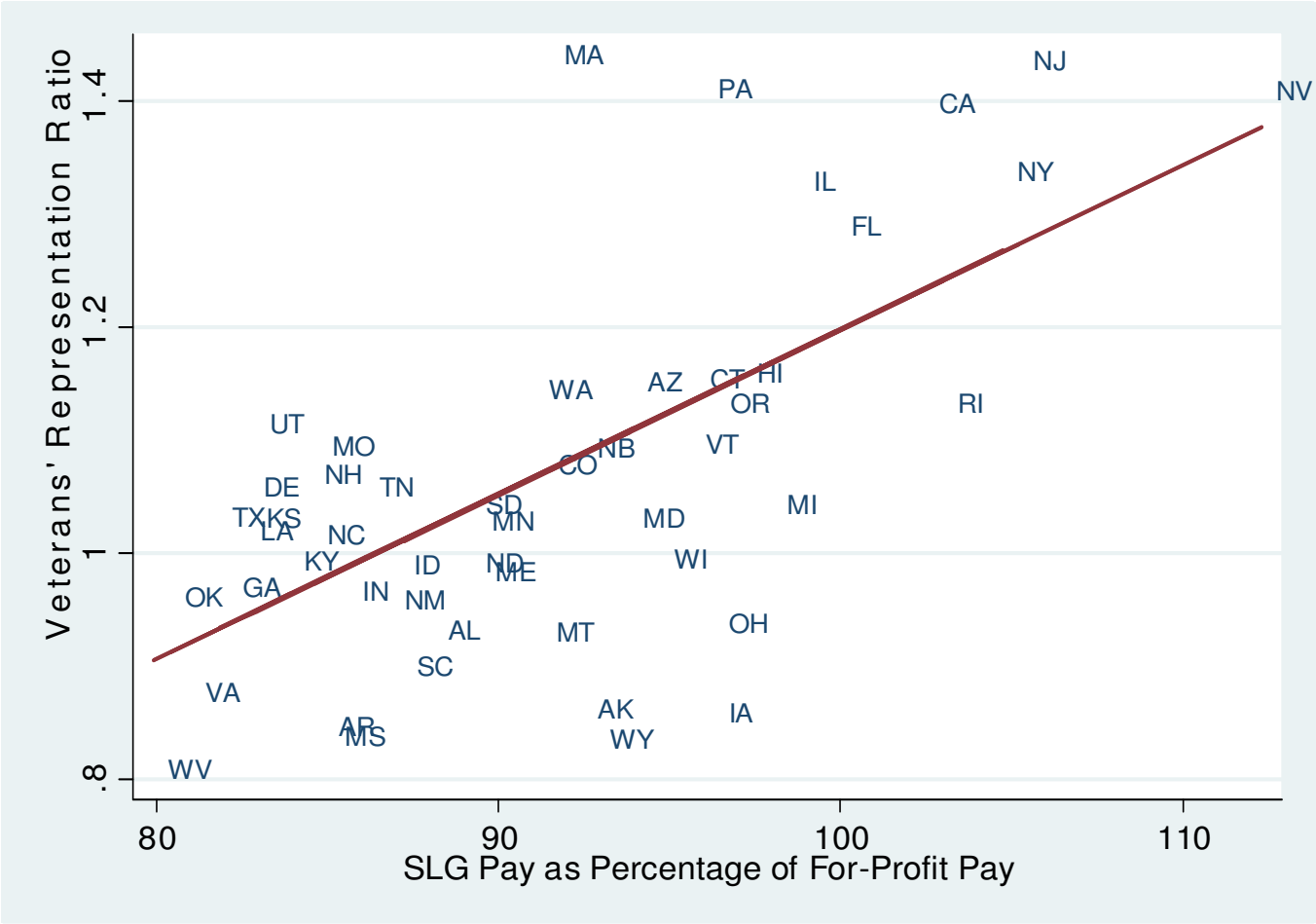


**Figure 1. SLG-Private Wage Advantage and Representation of Veterans**